

Grants Mining District Status Update & Upcoming Events

*Charge to
Tronox NAUM Account
A6KZ TR2 Fund
And
San Mateo Creek Basin
A6K6 T Fund
50%-50%*

Objectives

- Update management on interactions with stakeholders
- Update on Specific Mines
- Planned Community Meetings
- Identify meetings which DD wishes to participate
- Ground Water Phase II Update

Tronox NAUM – Navajo Outreach

- Done in Coordination with Region 9 CIC
- July – Eastern Agency Fair
- September – Navajo Nation Fair
- MONTH? – Baca Prewitt Chapter Meeting

Industry Days

- START and ERRS-like Contract
- Region 9 Placing Contract
- Flagstaff, AZ and Crownpoint, NM
- SOW Presentation and Q&A Session for START and ERRS-like Contracts
- Site Visits in Cove Watershed (R9) and Ambrosia Lake (R6)

Rio Puerco

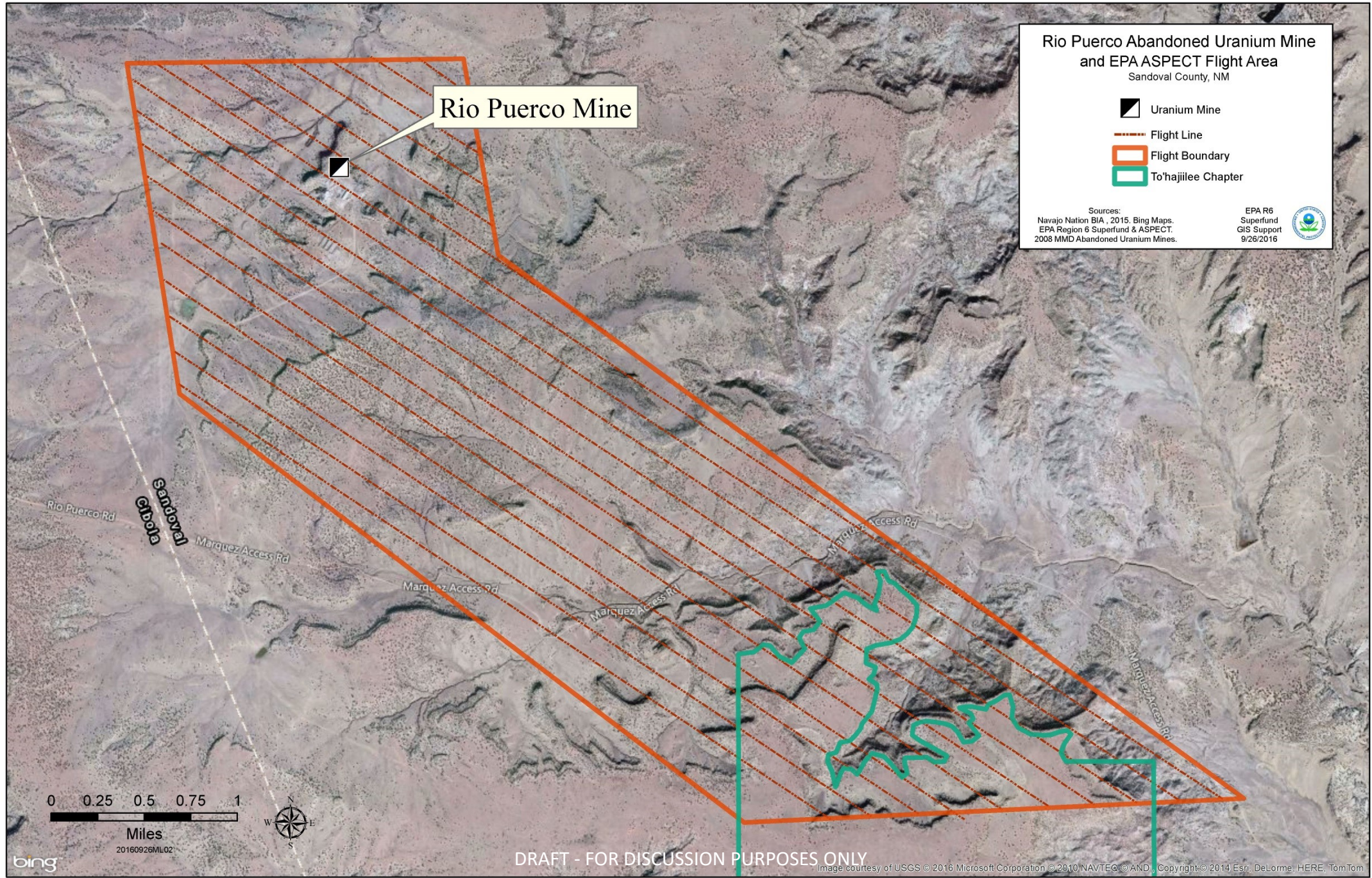

- ASPECT Flight October 5 & 6 (Weather Day October 7)
- Navajo Chapter Meeting Outreach – September 27
- Requested to attend future Chapter Meeting with final data

Rio Puerco Abandoned Uranium Mine
and EPA ASPECT Flight Area
Sandoval County, NM

■ Uranium Mine
--- Flight Line
▭ Flight Boundary
▭ To'hajiilee Chapter

Sources:
Navajo Nation BIA, 2015. Bing Maps.
EPA Region 6 Superfund & ASPECT.
2008 MMD Abandoned Uranium Mines.

EPA R6
Superfund
GIS Support
9/26/2016









Energy Future Holdings Bankruptcy






- \$4M Received in August and \$1M pending bankruptcy plan confirmation
- Doris, Hope, Faith and Isabella
- Strategy Development

EFH Bankruptcy Settlement Mines & ASPECT Exposure Rate

McKinley County, New Mexico

Legend

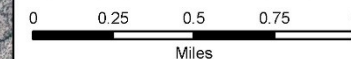
-  Uranium Mine
-  Other Viable PRP Mine
-  EFH Bankruptcy Settlement Mine
-  Tronox Mine
-  15 PLSS Section
-  Township/Range
-  San Mateo Creek Basin

Parameter	Exposure Rate (microR/hr)
	< 5,000
	5,000 : 10,000
	10,000 : 15,000
	15,000 : 20,000
	20,000 : 25,000
	25,000 : 30,000
	30,000 : 35,000
	35,000 : 40,000
	40,000 : 45,000
	> 45,000

Mine Locations within the San Mateo Creek Basin



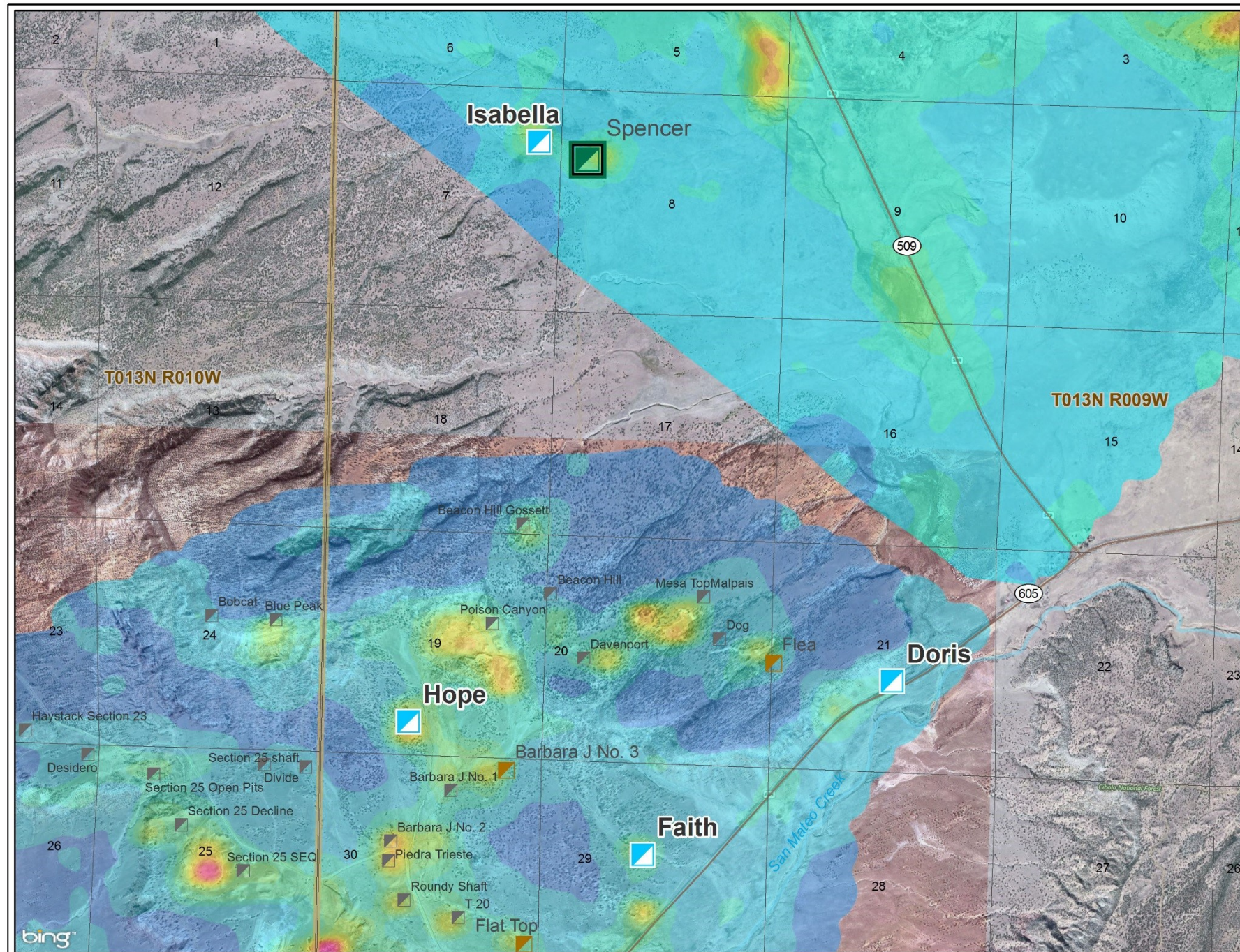
Sources:
 EPA Region 6 Superfund ASPECT Data, 2009/2011.
 Mine Sites: 2008 MMD Abandoned Uranium Mine Inventory.
 Imagery: Esri, Bing Aerial. Section/Township/Range: USGS.



EPA Region 6
 Superfund
 GIS Support
 9/19/2016



20160919ML03



Community Meetings

- November 15 – Ambrosia Lake Outreach Center
 - Phase 1 Groundwater Report
 - Five Year Plan Update
 - Removal Update (Availability Session)
 - Homestake (Availability Session)
- November 17 – Cibola County Building
 - Homestake
 - Phase 1 Groundwater Report
 - Five Year Plan Update
 - Removal Update (Availability Session)

Information Sharing Meetings

- October 19 – EPA\NMED\MMD Meeting
 - Phase 1 GW Report Update, EFH Settlement, Removal Update
- October 20 – Tronox Joint Agency Meeting
 - FY17 Planning, Phase 1 GW Report, Project Updates
- October 21 – EPA\Rio Algom Meeting
 - License Amendment Process, State Discharge Permits, Phase 1 GW Report
- November 9 & 10 – AUM Workgroup Meeting (Denver)
 - Region 6 Technical Presentation on Removal Assessment Protocol
- December TBD – Grants Mining District Partnership Meeting
- TBD – Laguna Council
 - Phase 1 Ground Water Report

NM Office of State Engineer Coordination

- Responsibilities Include:
 - Licensing Well Drillers
 - Issuing licenses to drill wells
 - Continuing Education of public and well drillers
- NMED Health Advisory
- Additional Coordination Needed
- November 16 – EPA\NMED\OSE Meeting Proposed



**THE NEW MEXICO
ENVIRONMENT
DEPARTMENT**



HEALTH ADVISORY FOR PRIVATE WELLS WITHIN THE SAN MATEO CREEK BASIN

Advisory

The New Mexico Environment Department ("NMED") cautions all present and future owners and users of private wells within the San Mateo Creek basin (see Figure 1) that your well water could contain some contaminant concentrations in excess of federal drinking water standards.

Possible contaminants that may occur in concentrations exceeding federal drinking water standards include chloride, gross alpha, lead, manganese, nitrate, pH, radium₂₂₆+radium₂₂₈, selenium, sulfate, total dissolved solids ("TDS"), and uranium; additional contaminants that have been detected for which federal drinking water standards have not been established include, iron, molybdenum, thorium₂₃₀, and vanadium. The sources of these contaminants in part may include naturally-occurring ore deposits within this portion of the "Grants uranium belt," as well as former uranium mines and mills within the basin that historically accessed these deposits.

San Mateo Creek Basin

- Consultation Letters being drafted
- 7%-16% of Navajo land within the basin boundary
- Coordination Call with R9 – October 13
- HQ Request – R6\R9\HQ meeting on Communication Strategy

SAN MATEO CREEK BASIN GROUND WATER INVESTIGATION UPDATE

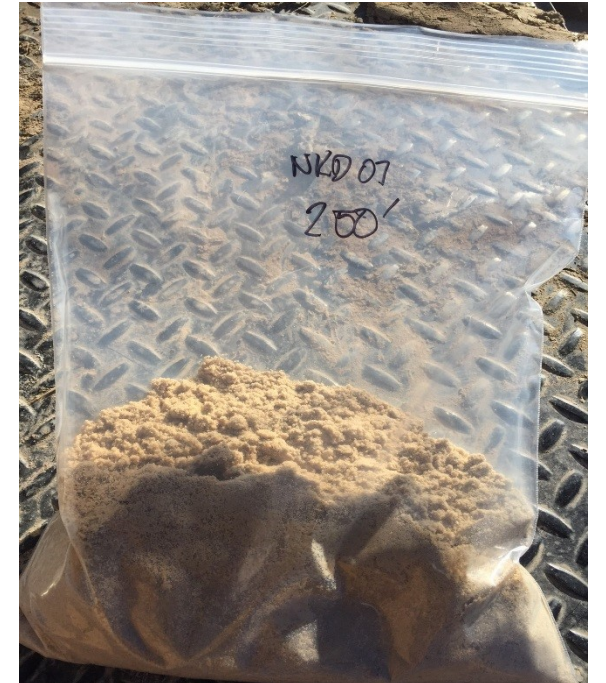
October 5, 2016

MULTI-PHASED INVESTIGATION

- Phase 1 – Alluvial Ground Water
 - Final Phase 1 Report completed
- Phase 2 – Bedrock and Alluvial Ground Water
 - Primary Focus – NAUM Concerns (Tronox Mines Impacts)
 - Data collection completed 2015/2016
- Phase 3 – Conceptual Site Model development
 - Project scoping ongoing



Saturated Alluvial Sediments



Dakota Sandstone Cuttings

PHASE 1 REPORT ROLL-OUT

- September 1 – Federal/State Partners
- September 19 – Key Stakeholders
 - Tribes
 - BVDA
 - MASE
 - Industry
- Early October - Website
- October 20 – Tronox Quarterly Presentation
 - Navajo, R9, State
- Week of November 14 – Public Meetings
- Early 2017 – Laguna Pueblo Senior Leadership

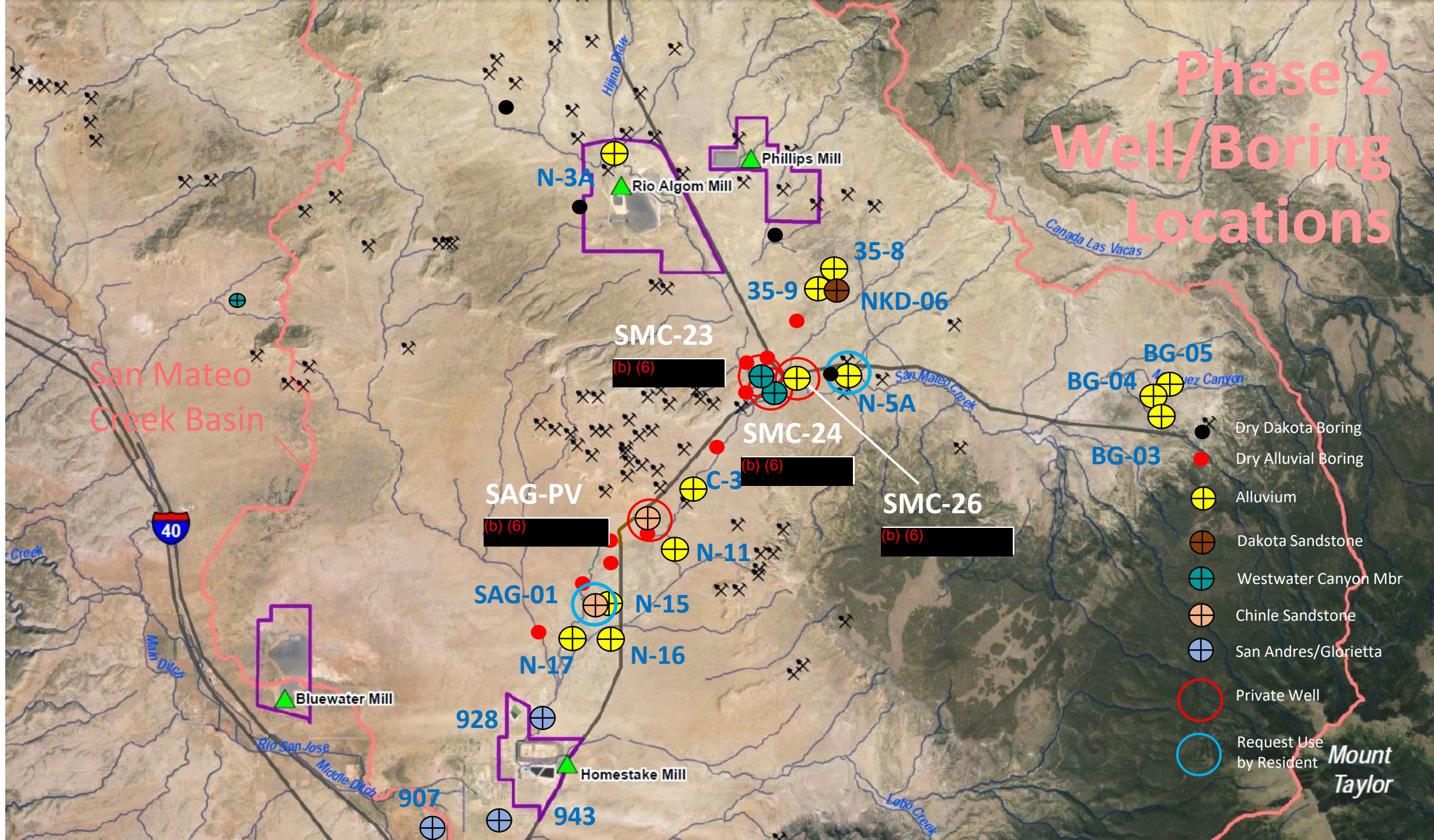
OVERVIEW OF PHASE 2 INVESTIGATION




- Characterize **BEDROCK** ground water quality
 - Drilled/cored 6 bore holes
 - Installed 2 new wells
 - Sampled the 2 new wells and 3 existing wells
- Fill data gaps for **ALLUVIAL** ground water study
 - Drilled 16 bore holes
 - Installed 5 new monitoring wells
 - Sampled a total of 12 monitoring wells
- Sample **PRIVATE** wells
 - 4 wells sampled
 - At request of well owner or EPA



*21 new and
existing wells
sampled in
2015 and 2016*

Phase 2 Well/Boring Locations



-  Alluvial Well
-  Westwater Canyon Member Well
-  Bedrock Well of Unknown Formation Well

Phase 2 Private Well Sampling Locations

SMC-20

(b) (6)

TD-478'

SMC-25

(b) (6)

TD-260'

LSM-56

(b) (6)

LSM-62

(b) (6)

LSM-58

(b) (6)

SMC-39

(b) (6)

TD-130'

SMC-26

(b) (6)

TD-120'

Livestock Watering Only

Piped into Bar
but not used for drinking
Use bottled water

SMC-23

(b) (6)

TD-260'

SMC-24

(b) (6)

TD-220'

Next to 3 Trailer Homes
Do not know if connected to Trailers
Reportedly not used for drinking (bottled water)

605

Livestock Watering Only



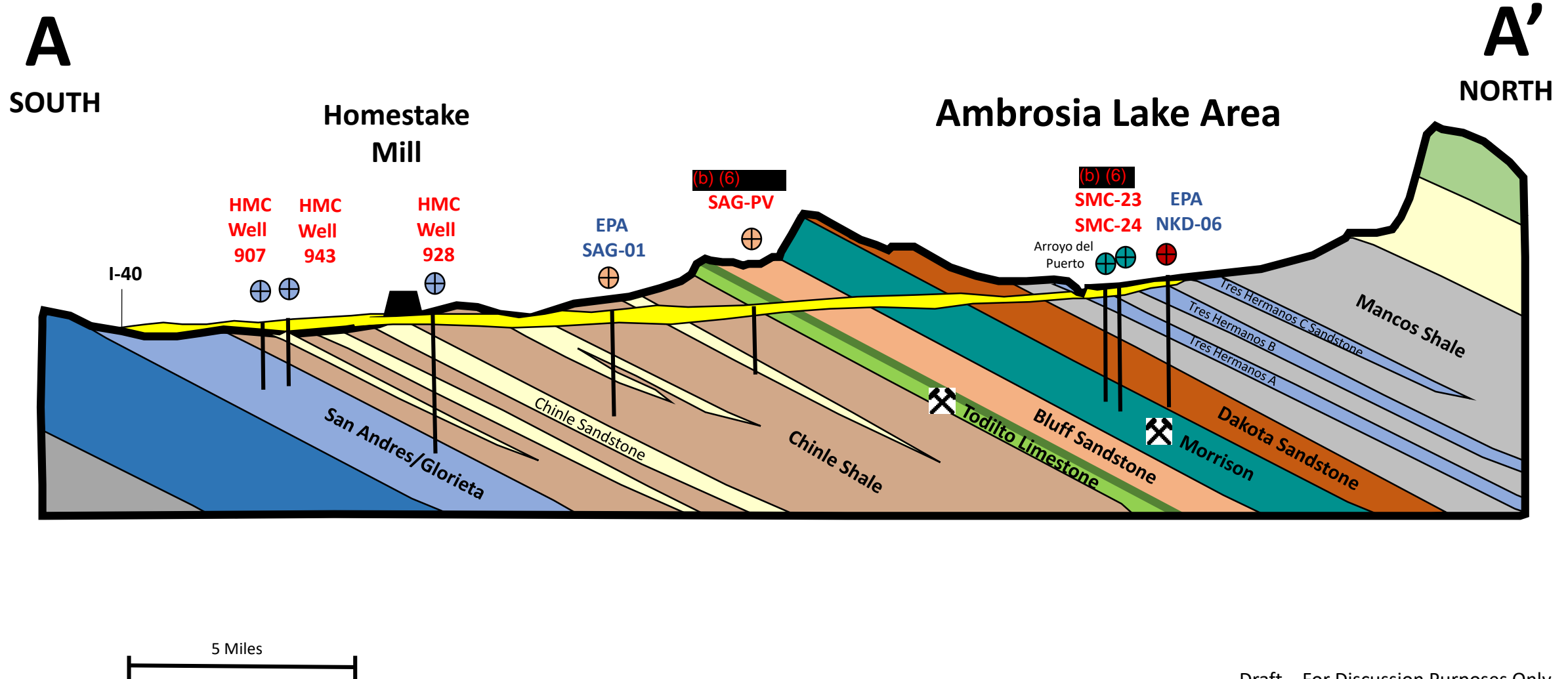
SAG-PV

(b) (6)

TD-553'

BEDROCK AQUIFER WELLS SAMPLED

Generalized Cross Section Through San Mateo Creek Basin



EXPOSED AND TILTED BEDROCK FORMATIONS

San Mateo Creek Basin



PRIVATE WELL SAMPLE RESULTS

Analyte	Federal MCL	NM Drinking Water Standard	SMC-23 (b) (6)	SMC-24 (b) (6)	SMC-26 (b) (6)	SAG-PV (b) (6)
Gross Alpha	15		11.9	15.8	113	18
Uranium	0.030	0.030	0.013	0.029	0.200	0.001
Selenium	0.050	0.050	0.038	0.017	0.022	0.001
Nitrate as N	10	10	14	17	7.3	20 ND
		Other Standards for Domestic Water Supply - NM				
Chloride		250	59	59	17	24,000
Iron		1	0.013 ND	0.013 ND	0.013 ND	0.020
Manganese		0.200	0.001 ND	0.005	0.003	2.5
Sulfate		600	2,500	2,400	130	1,100
TDS		1,000	3,800	3,700	590	26,000
		NM Standards for Irrigation Use				
Aluminum		5	0.023	0.019 ND	0.019 ND	0.019 ND

EPA Monitoring Well Requested for Private Use

SAG-01 EPA	N-5A EPA
101	142
0.044	0.250
0.015	0.004
0.440	1.6
50	24
15	0.027 ND
0.350	0.013
610	420
2,100	980
45	0.020

ASSESSMENT OF RESULTS

- Four Private Wells
 - Not suitable for drinking
 - Not recommended for other Domestic Water Supply uses
- Two EPA Monitoring Wells
 - Not suitable for drinking
 - SAG-01 well not recommended for other Domestic Water Supply or Irrigation uses

NOTIFICATION OF RESULTS TO WELL OWNER

- Analytical Results
 - Prepare letter and summary of results
 - Include well location map and ATSDR Fact Sheets on Uranium and Nitrate
 - Hand deliver letters and discuss results

SCHEDULE FOR PHASE 2 GROUND WATER REPORT

- Preparation of Report by START Contractor – Ongoing
 - Interpretation of analytical results
 - Preparation of maps, cross-sections, tables ★
- Draft report – October 2016
- Target Completion by January/February 2017
 - Includes 30-day review period of draft report by NMED

STATUS OF PHASE 3

Conceptual Site Model Development

- Requested proposals – Summer 2016
 - UT Bureau of Economic Geology (BEG)
 - USGS
- Plan to fund BEG for initial review of information – Fall, 2016
- Seek updated proposal from BEG – Early 2017
- Target completion - 2018



Dakota Sandstone

GMD Activities

- Community Meeting
- Coordination Meeting
- PRP Information Meeting
- Site Related Activity

